FREDERICK RESEARCH CENTER

Dear colleagues,

A fully funded postdoctoral position in atmospheric modeling using the WRF (Weather Research and Forecasting) model is available at Frederick Research Center (Cyprus Ionospheric Research Group, CyIRG, Nicosia, Cyprus).

The position is offered for **at least two years** (preferably starting from February 2025) to a postdoctoral fellow who will conduct and analyze WRF simulations with a focus on Data Assimilation, as part of the strategic research infrastructure project CYGMEN (Cyprus GNSS Meteorology Enhancement), aiming to enhance weather prediction research in Cyprus (characterized as a "hot spot" region in terms of climate change) and in the Eastern Mediterranean region with a focus to extreme weather events.

Requirements

- Academic degree (PhD) in exact sciences (preferably Meteorology, Physics, Computer Science, Mathematics, Earth Sciences)
- Good computer programming skills (primarily Linux, Python, matlab, R, C, C++, Fortran)
- Data analysis skills (statistics, time series analysis, plotting etc.)
- Excellent written and spoken English (Proficiency level)

Preferred qualifications

- Strong experience with WRF Data Assimilation
- Degree in Atmospheric Science
- Strong communication and interpersonal skills, motivated to work in a multidisciplinary environment

Benefits

Work in a respectful, diverse, inclusive and creative academic environment, based in the Nicosia campus of Frederick Research Center. Subject to potential continuous employment for more than two years. Access to all data from CyIRG research infrastructure/equipment (GNSS stations network, CYGMEN infrastructure)

Application

Applications should be written in English containing:

1. Current CV, including a list of publications
2. A general description of past research and future research interests (up to one page)
3. Contact information of at least one references

Interested candidates should contact Dr Christina Oikonomou by sending their applications electronically to res.ec@frederick.ac.cy and c.oikonomou23@gmail.com by 14th February 2025 with Reference title: "CYGMEN Postdoctoral fellow Job Application". The announcement will be opened until a candidate will be selected.

About us
[Frederick Research Center (FRC)](#) is recognized as one of the most significant research centers in Cyprus, after [ranking 3rd](#) among 473 beneficiaries for securing funding for research and innovation projects. FRC is a leading research non-profit organization in Cyprus established in **1997**. Since the beginning of its operation, FRC has been involved in **more than 140** externally funded (European: FP6, FP7, HORIZON 2020, Regional: INTERREG, National: RPF DESMI, RESTART2016-20) RDI projects, in the majority of which as a lead partner. A significant number of projects concern the domains of Applied Sciences and Technology, but the Center has also been and is keen to be involved in RDI activities relevant to the Environment, Education, Management & Economics and Social Sciences.

The Cyprus Ionospheric Research Group of FRC (CyIRG, http://cyirg.frederick.ac.cy/) was established in **2004** following the installation of a digital ionosonde (Digisonde DPS-4D) at FRC. Currently the group involves eight faculty members and four post-doctoral scientists with a primary focus in Ionospheric monitoring and modelling in support of national systems such as High Frequency (HF) communication networks and Global Navigation Satellite Systems (GNSS) reference networks (CYPOS). It is in the position to pursue this aim primarily by the main component of its infrastructure consisting of a top-edge modern digital ionosonde radar DPS-4D which is unique in the eastern Mediterranean area, and facilitates systematic near-real time high resolution ionospheric measurements.

The last five 5 years, the CyIRG group, having acquired experience in **GNSS Meteorology and Atmosphere remote sensing**, took the initiative to conduct **research activities, not only in the upper (ionosphere) but also in the lower atmospheric physics field, focusing on weather and climate extremes**. In this direction, the group has completed several projects till now, such as the Interreg funded project, BeRTISS (BalkanMed real time severe weather service), CyFFORS (Cyprus Flood Forecasting System), SWVASCY (Satellite Water Vapor Service Cyprus), PREWAM (Precipitable Water Vapor Monitor), MGR (Multi-Purpose GNSS Receiver) etc.

CYGMEN (Cyprus GNSS Meteorology Enhancement) project
In the context of the above initiative, recently (2024), our group succeeded to receive national funding (€1.500.000) for the CYGMEN project submitted in the frames of "Strategic Research Infrastructures" Call announced by the Cyprus Research Innovation Foundation (RIF), in order to **establish a Cyprus Meteorological lab (CyMETEO)** to promote scientific excellence in the field of operational weather prediction and meteorology in Cyprus. The objective of CYGMEN project is to build a unique comprehensive meteorological infrastructure (**CyMETEO infrastructure**) in Cyprus that will produce heterogeneous weather observations for the purpose of improved weather forecasting and weather/climate extremes investigation.

CyMETEO infrastructure will consist of a:
a) Lighting detection network of 5 antennas in Cyprus
b) hyper-dense GNSS network (5x5 km) for Precipitable Water Vapor (PWV) estimation
c) Radar Wind Profiler (RWP) for wind profiling and wind shear measurements up to 3km
d) Microwave Radiometer (MWR) for thermo-dynamical profiling
e) Meteorological stations
The data produced from CyMETEO infrastructure will be assimilated into WRF model over Cyprus, also in near-real time, which is an activity that will be conducted for the first time in Cyprus.